

CIO

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BY KIM S. NASH

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Mobility (BYOD, remote workforce) and **video conferencing** are new UC drivers.



Traditional UC drivers of **chat, web and voice conferencing, unified messaging and unified email and fax** management (in some industries) remain strong.

Benefits to organizations of all sizes according to organizations surveyed



Efficiency

Top 2 UC Drivers



Productivity

52%

of organizations feel strongly that offering a unified customer experience is a primary UC driver.



60% INCREASES PRODUCTIVITY



58% IMPROVES EFFICIENCY



57% IMPROVES COLLABORATION



51% CUTS COSTS

Which deployment model is most appropriate?

While

72%

of current implementations are on-premises

70%

are investigating use of the cloud or a combination of cloud supplemented by an on-site aspect for new implementations



Advice for those considering UC

After overcoming budget concerns, top areas of awareness in implementing UC are:



Security



Compliance



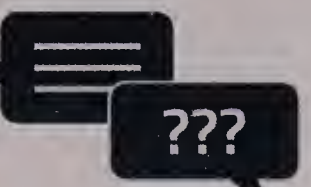
Integration



Education

A qualified UC partner with a portfolio of success

has dealt with these **ISSUES DOZENS OF TIMES**



The right UC partner can also

ANSWER QUESTIONS

about ongoing post-implementation support

Choose a UC partner



The right deployment model is best determined by working with an experienced UC partner that has deployed on-site, cloud-only and hybrid of both.



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COVER STORY Leading-edge CIOs don't just investigate the IT risks in mergers and acquisitions—they also uncover digital opportunities

BY KIM S. NASH

Cora Carmody, SVP of IT at Jacobs Engineering, helps vet acquisition targets based on business, IT and cultural fit.





FROM THE
EDITOR IN CHIEF

start

M&A Stretch Goals

Few business situations are more fraught with equal measures of peril and promise than mergers and acquisitions. Billions of dollars change hands. Thousands of jobs are affected. Yet the majority of M&As never live up to the deal-makers' giddy expectations.

Despite all the risks, M&A deals are surging (up 24 percent this year) and more CIOs are flexing their business muscles as they join the advance team evaluating the risks and rewards. As Managing Editor Kim S. Nash writes in our cover story ("In the Heat of the Deal," Page 26), "sometimes only a technology leader can recognize IT assets that could increase the value of the deal."

Our story details some of the key lessons learned by IT leaders involved in recent acquisitions made by Land O'Lakes, Jacobs Engineering and Avnet, an electronics component distributor. "Not many of us get trained in due diligence or mergers and acquisitions. You're learning on the job," says Steve Phillips, CIO of the \$25 billion Avnet and a veteran of 51 acquisitions in the past decade. "Your first one is always really hard."

Being part of a due diligence team is a valuable way to stretch your skills as a business executive. "It's a great opportunity to differentiate yourself from other CIOs," says Jan Roehl-Anderson, a principal at Deloitte Consulting. At \$11.8 billion Jacobs Engineering, for example, SVP of IT Cora Carmody's extensive due-diligence experience brings her into regular discussions with the board of directors.

At Land O'Lakes, CIO Mike Macrie hired a former colleague with international M&A experience, who then created an IT playbook of speedy, reliable processes to follow in evaluating pending deals. "We had to hire someone with the ability to talk about risk, planning and synergy targets," Macrie says, "and how IT could be an enabler to possibly gaining more."

In a process usually dominated by number-crunching and legalese, a CIO brings something new and necessary to the table: expert knowledge of IT risks. How many accountants can spot a potentially dangerous cybersecurity hole or the smoking gun in a software license? How many lawyers can figure out the real value of a company's data or IT capabilities?

"An informed CIO could suggest that maybe the company is not worth what it says it's worth," says Rudy Puryear, who runs the IT practice at Bain and Co. "These things don't appear on the surface, but a couple layers deeper."

Maryfran Johnson, Editor in Chief, CIO Magazine & Events
mfjohnson@cio.com

CHATTER

Hadoop's Not Enough

Only 48 percent of **data scientists** have used Hadoop or Spark for their jobs, according to a recent survey by Paradigm4, and 76 percent of respondents said they think **Hadoop is too slow or too hard to use**. These limitations are especially difficult to deal with now, as 71 percent of those polled say that the **increasing variety of data sources**—not just the sheer volume of data—has **made their jobs more difficult**. This trend "is forcing data scientists into **shortcuts** that leave data and **money on the table**," says Marilyn Matz, CEO of Paradigm4.
www.cio.com/article/2449814

Wearables: Too Geeky

Wearable technology may be a cutting-edge **consumer trend**, but two analysts at Beecham Research warn that if vendors don't start **paying more attention to aesthetics**, they may find the fad fading. To stay on top, says Claire Duke-Woolley, they need to offer tech that is **fashionable** and easy to use, **not just functional**. "There is a real difference between making technology wearable versus making technology products that are desirable and **genuinely engage with consumers**," she says. Saviero Romeo concurs, saying that tech startups have to pay more attention to "**business models**, marketing, branding, design and **ethics**."
www.cio.com/article/2455558

Correction

Adam Hartung's "Beyond Navel-Gazing" column in the July 1 issue incorrectly implied that Sbarro's IT department does not collect and analyze external market data. Sbarro reports that it does obtain and analyze data like mall vacancy rates and traffic patterns.

Compiled by Senior Editor Colleen Barry.
Have a comment about a story in this issue? Go to www.cio.com/magazine or write to letters@cio.com.



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FROM THE PUBLISHER

Pendulum Swings

Thanks to my job as publisher of this magazine, I have the pleasure of meeting dozens of our CIO readers each month at the various events we hold across the country, and I'm also in regular touch with the vendor community. This unusual combination gives me a 360-degree view of the hottest topics and trends in our industry.

One of those topics continues to be the evolving relationship between CIOs and chief marketing officers. So much has been written about CIO-CMO collaboration in the past two years—especially about who will control IT spending—that you might think the subject has been exhausted. Not by a long shot.

The bulk of what I've read on this topic repeats the tired conviction that significant portions of IT budgets will move into the hands of CMOs. I've seen more than a few major IT vendors ramp up sales resources and aim them at executives with business titles instead of IT ones. But the truth about technology budgets is more complicated.

While a greater portion of the CMO's budget is earmarked for technology these days, the CIO's budget remains largely flat, according to "The CIO-CMO Omnichannel," a new survey of more than 400 IT and business executives conducted by *CIO* magazine, EPAM Systems and The CMO Club. The good news is that both groups are steadily improving their working relationships and are mutually determined to move rapidly on digital business transformation. Yet some big disconnects remain over turf and agility. For example, 86 percent of the CIOs in our Omnichannel survey believe they own mobile apps projects, while 74 percent of CMOs believe they do. Another recent CIO-CMO study from Accenture confirms the greater collaboration but underscores ongoing frustrations with the urgency marketers feel versus the response times CIOs can deliver.

What I see is an industry influence pendulum swinging back toward CIOs. In recent weeks, I've spoken with two major software players—each known for targeting marketing executives first—who told me they now need to reach CIOs directly. They've found that getting a foothold in individual business units doesn't mean major enterprise deals will follow. They need the CIO's authority and expertise to land an enterprisewide deployment.

So regardless of who you may be sharing them with, the keys to the enterprise technology engine are still in the CIO's hands.

Adam Dennison, SVP & Publisher
adennison@cio.com



CEO Matthew Yorke
PUBLISHER Adam Dennison
CHIEF CONTENT OFFICER John Gallant

EDITORIAL

EDITOR IN CHIEF
Maryfran Johnson
EXECUTIVE EDITOR
Mitch Betts
MANAGING EDITOR
Kim S. Nash

SENIOR EDITOR, COPY AND PRODUCTION

Colleen Barry
STAFF WRITER
Lauren Brousell

CONTRIBUTORS

Mary Brandel, T.J. Graven, Mike Gualtieri, Martha Heller,
Chris Kanaracus, Zach Miners, Stephanie Overby,
Mary K. Pratt, Dan Roberts, Brian P. Watson,
Martyn Williams

CONTRIBUTING EDITORS

CIO EXECUTIVE COUNCIL VICE PRESIDENT, STRATEGY

Rick Pastore

DIRECTOR OF STRATEGIC CONTENT

Tim Scannell

DESIGN

ART DIRECTOR
Terri Haas

ONLINE EDITORIAL

EDITORIAL DIRECTOR

Brian Carlson

EXECUTIVE EDITOR

Dan Muse

ONLINE MANAGING EDITOR

Rich Hein

SENIOR EDITORS

Brian Eastwood, Al Sacco

SENIOR ONLINE WRITERS

Tom Kaneshige, Matt Kapko, Thor Olavsrud

ASSOCIATE ONLINE EDITOR

Sheryl Hodge

STAFF WRITER

Sharon Florentine

RESEARCH

RESEARCH DIRECTOR
Carolyn Johnson



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WHO COVERS WHAT www.cio.com/staff

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Unlock the Human Factors of Innovation

When innovation becomes the top business priority, the first move companies make is usually the wrong one.

"They reflexively turn to process and technology," says former CIO Frank Wander, now CEO of PeopleProductive, a talent-management consultancy. "What they overlook is the talent infrastructure, which is the real engine of innovation."

In workshops at our recent CIO Perspectives events, Wander ran small-group brainstorming sessions to zero in on the human factors of innovation. Participants' wide-ranging suggestions included building in "think time" on the job and creating additional ways for people to collaborate and unleash their creativity.

Here are some of the specific ideas the CIOs generated:

- At least one afternoon a week, forbid any meetings or interruptions. Give people free time to think, create and explore.
- Allow team members to build up expert reputations on internal social media, thereby "inventing learning through esteem."
- Encourage "creative abrasion" between teams with different thinking styles, so people can connect and share ideas.

—Maryfran Johnson

“Innovation creates competitive advantage, so the ROI is literally unlimited.”

—FRANK WANDER, CEO, PEOPLEPRODUCTIVE

PROBLEMSOLVERS

On the impact of analytics:

"Analytics are critical. For every deal we write, if we don't calculate risk correctly, then we don't price it correctly, and that can result in a loss."

—Mojgon Lefebvre, CIO of Global Specialty, Liberty Mutual

On the role of data in hiring:

"It's not that we need to hire a data scientist. We need to drive data as a core competency into every hire and retrain the workforce."

—Brook Colangelo, EVP & CTO, Houghton Mifflin Harcourt

On today's security risks:

"The CIO is the compliance information officer. We spend half the day managing regulatory oversight. The glory days of writing code and having fun with technology have been supplanted."

—John Holomko, CIO, Beth Israel Deaconess Medical Center



Laura Horton
IT Communications Manager,
Georgetown University

IT Talk for All Ages

At Georgetown, your audience includes boomers, Gen Xers and millennials. How do you effectively communicate with all of them?

The gap between students, faculty and staff and their uptake of technology is huge. We get 2.6 million phishing attacks per month at George-

town, so we have to carefully weigh if it's a big enough deal to send an all-campus email. [Students] can spot phishing. But I'll get tons of responses from faculty and staff who say, "Thank you for the email, I almost clicked on the link." It's forcing us to be creative and nimble as an organization.

Also, our board is an audience I'm messaging through our CIO, Lisa Davis. We're working to make sure our board is engaged in what we're doing to make sure we're getting the spending and support we need.

Does being a millennial give you any advantage in serving these audiences?

I don't consider myself to be a super tech-savvy person

for my generation. But I can connect with young people and [those] who do not know anything about technology. [It's about] learning how to break the message down so that it actually communicates something to our audience.

Georgetown students called for more information on demand. How are you delivering that?

In addition to our mobile platform, which has a bus-tracking system and dining-hall menus, we launched a laundry app which allows students to see all of the washers and dryers on campus and will send them a text message five minutes before the cycle ends.

—Louren Brousell

UPCOMING EVENTS

CIO Perspectives Chicago

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September 18, 2014

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CIO Perspectives Houston

Houston, Texas

November 11, 2014

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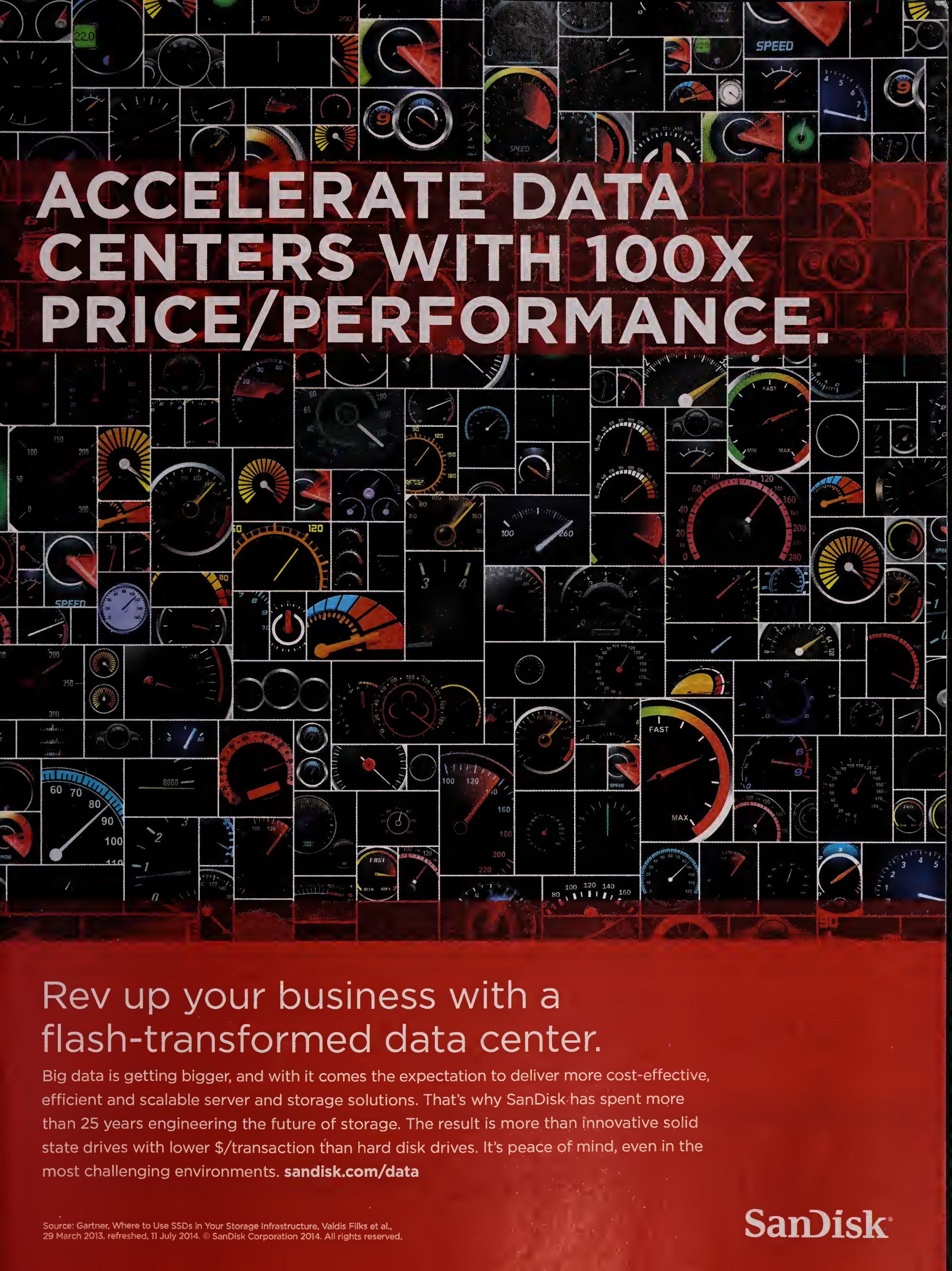
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VIEWPOINT



Rick Hopfer

CIO, MOLINA HEALTHCARE

Rick Hopfer is chief information officer for Molina Healthcare, where he leads the IT strategy and operations.

FOR MORE INFORMATION:

please visit www.delphix.com or download our white paper at www.cio.com/whitepapers/delphix

With Data Virtualization, Health Care Firm Reduces Costs, Increases Efficiencies

As a health care provider, Molina Healthcare is unique. No other organization offers health plans, medical clinics and a health information management solution. Its IT needs, however, are common. Like any organization undergoing rapid growth, Molina faced escalating storage costs and the need to transform IT to increase efficiencies. CIO Rick Hopfer addressed those needs by reducing the organization's nonproduction database footprint by 800 terabytes with data virtualization technology.

What are your key priorities as CIO of a major health care player?

Over the last few years Molina has doubled in size. Our revenues, membership and number of employees have all increased. As CIO, I'm focused on how the IT organization can manage that growth while addressing security and compliance issues, and responding to line-of-business applications and project requests.

How did data management practices constrain desired business outcomes around your key priorities?

We faced a lot of challenges prior to implementing Delphix. At the time, we were focused on siloed structures within the IT organization. Because of the company growth, our storage costs were projected to increase. We had a significant number of projects and applications, and production data was increasingly being copied into nonproduction environments. Time was another problem. Data replication took hours to complete every night. As far as data management practices, prior to Delphix we didn't have a lot of them. We were very reactionary.

How do you describe the approach you chose and the solution selected?

We needed a creative solution that would

offer us agility and scalability while saving us money. That's what drove us to look at Delphix and what they were doing around data virtualization. We had successfully implemented a converged infrastructure strategy and had seen a lot of advantages, everything from consolidation of our requirements in data centers to being able to deploy applications more rapidly. So convergence and virtualization were concepts we were already familiar with when we began working with Delphix.

How has your investment impacted IT processes?

The processes and technologies we've brought in to manage company growth have proven beneficial. While Molina has more than doubled in size over the last three years, our actual head count to support the IT infrastructure has not increased. Delphix is one of the better examples of the ROI we've been able to achieve. We've saved between \$6 and \$10 million over the past three years in physical storage alone.

What advice do you have for other CIOs struggling with growing data complexity?

I don't think it's going to get any easier. CIOs need to work closely with their current vendors to understand their roadmaps and what they are doing to help us in the future. Also look at emerging and disruptive technologies that will have a transformational impact. Look for technologies that support business cases, and adopt solutions that reduce vendor lock-in. While I like working with my technology vendors and partners, I want to make sure I have architectures and models in place that allow me to have some independence. Working with vendors like Delphix allows me to have that flexibility. ■





11

Put a Park in Your Pocket

SeaWorld studied how customers used its old mobile app so it could make a splash with its new one **BY MARY K. PRATT**

After three years of poring over how customers used its first mobile app, SeaWorld Parks and Entertainment recently rolled out a new set of apps designed to engage park visitors with a more personalized, interactive experience.

SeaWorld, a \$1.5 billion company that runs Busch Gardens and Sesame Place in addition to its famous marine-life theme parks, found that customers liked some features in the app's first iteration, such as using it to find their car after a long day. But overall, visitors wanted a more responsive app than the one SeaWorld began offering in 2011, says CIO Darla Morse.

The new Discovery Guide mobile apps can display up-to-the-minute ride wait and show times. Users can get alerts about exclusive offers and can filter the list of rides by height requirements, so they see only the ones their kids can ride. Interactive maps use a smartphone's GPS to suggest routes between attractions with estimated walking times. The apps also include scavenger hunts as a way to gamify engagement and education. ▶▶▶

.....**22%** Office workers who admit that they share their work passwords with colleagues more frequently now than they did two years ago. IS Decisions

►►► **Mobile app** Continued from Page 11

This past summer, SeaWorld added a mobile wallet for one-touch purchasing: Visitors can enter credit card information into the app, then buy items quickly all day. "This is our park in your pocket," Morse says.

Give the People What They Want

SeaWorld spent significant time figuring out what visitors want and tailoring the new apps to their tastes. Along with usage data from the old app, the company surveyed guests and gathered feedback through social media. That's an important lesson for all organizations, says Nisha Sharma, a managing director at Accenture. "You need to include users in requirement gathering," Sharma says.

"We learned we needed a platform that integrated with our back-end system [for rides and shows] to make this a more interactive, real-time functional place for our guests," Morse says.

Another lesson learned: the app needed a strong foundation. Morse's team mapped out the design to understand which systems would be affected and what changes would be necessary for the new features. "A lot of companies get scope creep because they're pouring cement before the design is finished," she says, noting that her team used a waterfall development methodology to build the foundation but will use agile development to quickly add new capabilities.

SeaWorld worked with vendor TE2 to manage and secure real-time connections between core systems such as ticketing, e-commerce, park scheduling, content management, and its Discovery Guide apps.

Building that strong foundation led to another crucial lesson: The need for IT to work with other teams within the organization. The team met daily and updated key stakeholders monthly, Morse says. "This cannot happen without every single group we have: marketing, operations, merchandizing, culinary, IT. We work very closely with all these to ensure that what we do drives value."

Mary K. Pratt is a freelance writer based in Massachusetts.

crunch

Digital? C-Suite, Yes. Board, No.

C-level executives have learned the importance of supporting the digital enterprise. The board has yet to get the memo.

Sponsoring or directly engaged in digital initiatives:



SOURCE: MCKINSEY & CO. SURVEY OF 850 C-LEVEL EXECUTIVES, APRIL 2014

CIOs, CMOs Squabble Over Digital Speed

Forced into an arranged marriage, the CIO and CMO are trying to make things work. Still, disagreements arise. One in four CIOs believe CMOs lack the vision to anticipate new digital channels, while many CMOs say CIOs lack the sense of urgency needed to respond to shifting market conditions.

These are some of the findings in a recent Accenture survey of more than 1,100 senior marketing and IT executives. At the heart of the strained relationship is a difference in the perception of speed. In the survey, 43 percent of CMOs complain that the technology development process is too slow, while an equal percentage of CIOs say marketing requirements and priorities change too often to keep up with.

On the bright side, the CMO-CIO relationship has improved over the past year, or at least the executives involved are trying to improve it. In the survey, 43 percent of CMOs and 50 percent of CIOs say they're working more collaboratively than ever despite the clashes.

Of course, there's still a ways to go. Only one in four respondents say collaboration is currently at the right level, up from a paltry 10 percent last year.

—Tom Kaneshige

.....**46%** of technology companies globally have women in the C-suite or on the board of directors, compared to 15% at Fortune 500 firms. Silicon Valley Bank



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The C in CIO Isn't for Celebrity

The best IT leaders have a powerful trait rarely associated with senior executives: humility **BY DAN ROBERTS AND BRIAN P. WATSON**

Longtime CIO Steve Bandrowczak has accomplished a lot in his career: He's run large global organizations, spoken on the biggest stages, and driven impressive results. But he still sets aside 30 minutes each day to learn something new.

That's a big commitment for a globe-trotting executive who sleeps more nights at 35,000 feet than he can count. Why is he so diligent about continuous learning? As seasoned as he is, Bandrowczak says he recognizes he will never know it all, so he's always looking to improve. His curiosity is a formidable tool.

After many years as a CIO at companies such as Nortel, Lenovo and DHL, Bandrowczak is now senior vice president for global business services at Hewlett-Packard. He's one of several CIOs profiled in our book, *Confessions of a Successful CIO*, who demonstrates a powerful yet rarely mentioned leadership quality: humility. And in this digital age, dominated by selfies (look at me!) and cluttered with self-described "visionary" leaders, it's time for some collective introspection.

Studies have found humility to be a valuable executive asset. A September 2013 study by a team at the University of Washington's Foster School of Business found that workers who thought their managers were more humble were more engaged in their work and less likely to seek employment elsewhere. A May 2014 study by Catalyst found similar results.

While interviewing the CIOs in our book, we found it refreshing that the best leaders share this trait. Yes, they're confident, but it's not ego-driven.

There are easy ways to spot a humble leader. For one, they talk openly and honestly about failure. Wayne Shurts, CTO at Sysco, starts leadership discussions by talking about mistakes. The results of one failure, early in his career at Nabisco, are "ingrained in my soul," Shurts says.

The humble CIO will also emphasize his people's

importance more than his own. Shurts objects to corporate cultures where workers in the field are mere minions of headquarters staff. He thinks his people are more valuable to the company than he is.

Humble leaders also know they need to lean on others for advice and counsel. When Carol Zierhoffer was CIO of ITT, she had to do a 180-degree turn from centralizing the conglomerate's systems and processes to decentralizing them so that ITT could be split into three companies.

Zierhoffer knew she couldn't go it alone. One of her first decisions was to solicit insights from peers at companies like Motorola, Cardinal Health and Altria, all of whom had managed corporate break-ups. She received some spot-on advice not only about the IT operations, but also about how to retain her best talent.

But the most striking evidence of a humble leader? When their organizations succeed, these CIOs talk about "we" and "our." When something goes wrong, they talk about "I" and "my."

The problem is that too many other business leaders don't. We cringe at how often we find executives who are proud and self-important.

Humble people tend to be more likeable and more respectable—qualities you just can't buy. While too many people are asking, "What's in it for me?" humble leaders ask, "How can I help you?"

Will you embrace lifelong learning? Will you speak openly and confidently about your failures? Will you seek advice from your network—and give advice without expecting something in return?

Those are just a few of the questions current and aspiring leaders must ask themselves. As Sheleen Quish, another great CIO, told us recently: "Don't lose your humility in the job. The 'C' in 'CXO' does not stand for 'celebrity.'"

Dan Roberts is CEO of Ouellette and Associates. Brian P. Watson writes and speaks about IT leadership.

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learning? Will
you speak
openly about
your failures?
Will you seek
advice from
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The Road Show Made Smoother

On-the-go investor relations professionals get a more informative mobile app so they're better prepared for important meetings **BY LAUREN BROUSELL**

MOBILE CRM The job of an investor relations (IR) professional is all about the next meeting. Whether the meeting is with a potential investor or an analyst or someone at a conference, it's up to IR pros to stay informed about market fluctuations and news so they can compete for capital and investors.

Last year, Nasdaq OMX's Corporate Solutions group rolled out a mobile app to its IR customers to help them prepare for those meetings, but "from a context and user-experience perspective, it left a lot to be desired," says Chris Collett, the company's VP and global head of IR strategy.

The app included basic features such as contacts and a calendar, but when Nasdaq acquired the IR, PR and media businesses of Thomson Reuters in June 2013, it saw an opportunity to upgrade the app.

Nasdaq surveyed its IR custom-

ers, including Coca-Cola and GE, and interviewed them over five months to find out what features would help them most on the road. Most customers said they wanted to be able to easily access content related to their company and competitors from within the app instead of having to search for it online.

The new version of IR Mobile, for iOS and Android devices, offers customizable views of stock prices, broker notes and articles. The app can also display up to nine companies side-by-side for comparison. Since the new release in late April, IR Mobile usage has increased 56 percent.

Patricia Baronowski-Schneider, president of IR consulting firm Pristine Advisers, says having content all in one place is a big time-saver for the on-the-go IR professional. "While most firms have an IR website, I often find it frustrating when I have

to spend precious time searching around the website to find the information I'm looking for," she says.

Other new features on the app include real-time stock quotes, news, broker research and company ownership information.

The app is also integrated with Nasdaq's desktop CRM system so that meeting notes entered in the mobile app show up at headquarters to keep company executives informed about how the meetings went.

Tracking the meeting results helps to determine whether bringing the company's CEO or CFO to investor meetings was worthwhile, says Mike Cotter, senior vice president of Nasdaq Corporate Solutions. "You can see if you're getting a return on your executives' time."

Contact Staff Writer Lauren Brousell at lbrousell@cio.com.

New LinkedIn App Aims to Forge Connections

SOCIAL MEDIA LinkedIn is trying again to build a mobile service that helps people keep in touch, even when they're not job hunting, with an app called Connected. The new app, which replaces the less-interactive Contacts app, displays events like job changes, work anniversaries and mentions in the news as cards people can swipe through. The cards allow interactions similar to Facebook posts, including "likes" and comments, and even follow-up phone calls.

The Connected app is singularly focused on people—it won't let users, for instance, edit their profiles, search for jobs, or follow companies. LinkedIn wants the app to be a destination, like Facebook or Twitter, instead of a means to an end.

—Zach Miners

A Million Fake Apps Target Android

ANDROID Fake apps made to look like official ones but designed to steal user data are increasingly targeting Android phone users, according to a study by Trend Micro.

The company searched for fake versions of the top 50 free apps in the Google Play store, finding illegitimate replicas of 77 percent of apps studied. The fakes often look and act like the real thing, but carry a dangerous extra payload.

Trend Micro, which makes antivirus and anti-malware software, says it cataloged 890,482 fake apps. More than half were judged to be malicious, of which 59,185 had aggressive adware and 394,263 had malware.

The most common type of fake app purports to be anti-virus software. For example, "A rogue antivirus app known as 'Virus Shield' received a 4.7-star rating after being downloaded more than 10,000 times, mostly with the aid of bots," the report says.

—Martyn Williams

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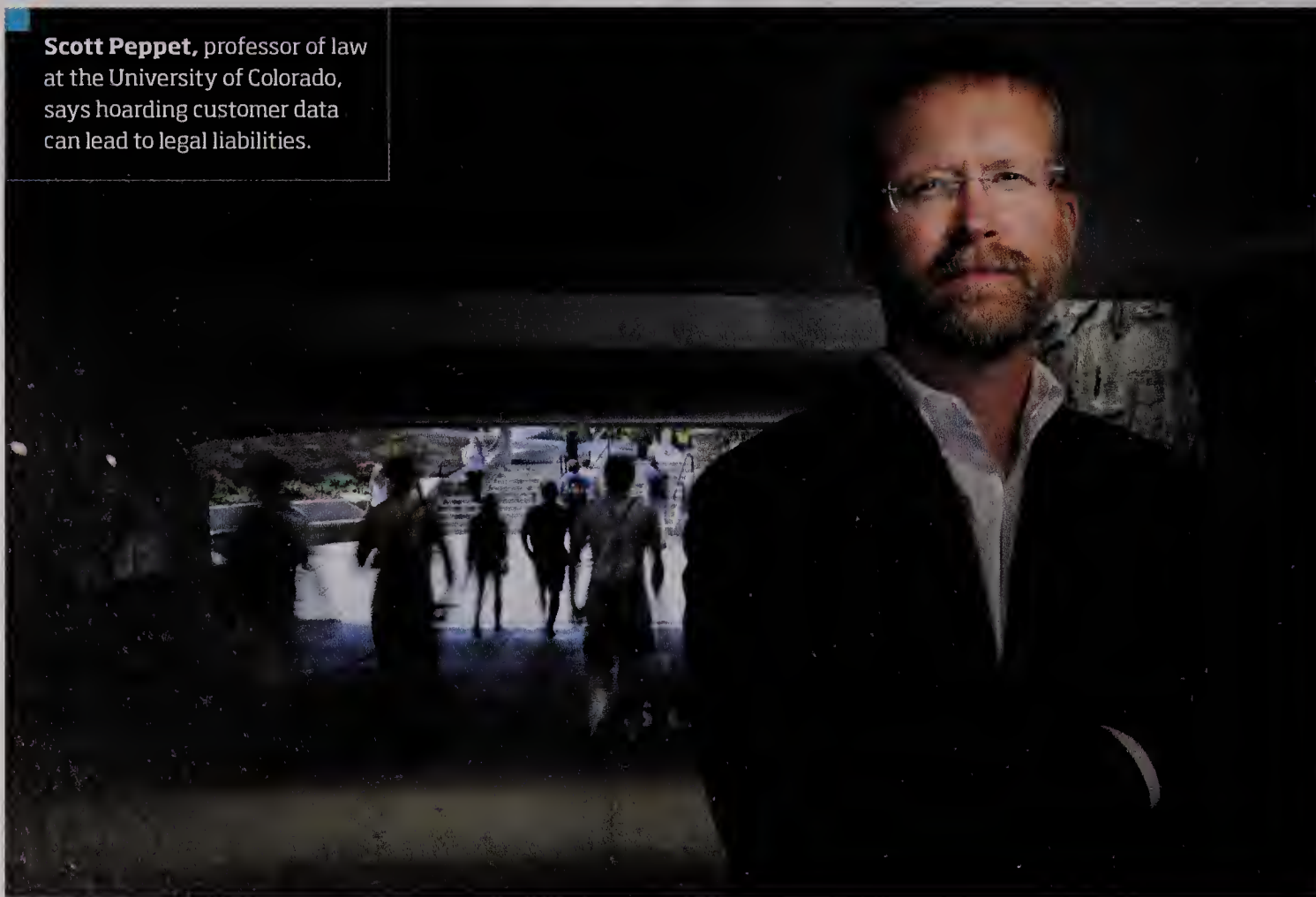
Think through privacy, compliance and other legal gotchas inherent in the Internet of Things **BY STEPHANIE OVERBY**

CIOs have big ideas for marketing and customer experience using sensors and analytics.

But what IT leaders might not be thinking about yet are the legal ramifications of a growing network of physical objects accessed through the Internet and connected to the corporate network. "Many of the legal issues are not well understood even by sophisticated privacy practitioners," says Christopher Wolf, a partner at the law firm Hogan Lovells. "In the world of sensors rather than computer screens, the legal issues are challenging."

The Federal Trade Commission last September took its first action against an Internet of Things manufacturer. TRENDnet, which marketed its Internet-connected cameras for home security and other uses, settled with the FTC over faulty software that left its cameras ▶▶▶

Scott Peppet, professor of law at the University of Colorado, says hoarding customer data can lead to legal liabilities.





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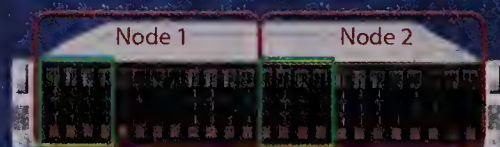
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SMC-20140616

vulnerable to online viewing and listening. Legal issues are destined to multiply as the Internet of Things market grows. Cisco has predicted the 10 billion connected devices that existed in 2010 will balloon to more than 50 billion in 2020.

Analysts watching these developments advise CIOs to consider self-regulating on issues of privacy, security and consent, to stay on the right side of the evolving law.

Security Scares

Tech leaders may assume they can anonymize data to protect an individual's privacy. But researchers have shown that many large data sets can be re-identified with less effort than one might assume, says Scott Peppet, professor of law at the University of Colorado. Location data, for example, may be easily reconstructed. "This suggests that CIOs should really be looking at the data they're tracking and storing, and asking whether those data are absolutely necessary to their business model or to improving the user experience," Peppet says. "If not, think twice before hoarding huge amounts of potentially very sensitive, and very revealing, data."

Groups like the Future of Privacy Forum are examining de-identification to provide clarity for regulators, says Wolf, who founded the think tank. "The greater the protections against re-identification, the better insulated an entity will be from enforcement under privacy laws and principles."

Many Internet-connected devices have limited computing capability, connectivity or battery power, and their designers may not be accustomed to addressing network security issues the way a large enterprise does. "If you make ovens or cars, network security may not be your thing," says Peppet. Once security flaws are identified, it may be difficult to update and protect these devices. Most do not have auto-update mechanisms due to bandwidth and power constraints and will require manual patching.

CIOs should think about when and how they will ask individuals to provide meaningful consent for the use of this data, he adds. That means providing clear notice of what data is accessed, how it is analyzed and used, where it is stored, how it is encrypted and under what circumstances it will be disclosed. It's particularly challenging to address consent for a product without a screen or for connectivity that the consumer may not be aware exists, he says.

"It's difficult for consumers to really understand the data practices behind these devices, and similarly hard to argue that [they] are providing valid consent," he says.

Stephanie Overby is a freelance writer based in Massachusetts.

Things You Need to Know

DIGITAL SIGNAGE

1 IT'S MORE THAN ADVERTISING. Digital signage generally displays content for a targeted audience at venues such as college and corporate campuses, medical facilities, retailers, transportation centers and work spaces. Organizations from all types of industries use digital signage to deliver messages to consumers and employees alike. They use it to advertise products, improve brand awareness, increase worker efficiency and provide information and instructions.

2 IT WILL REQUIRE SYSTEMS INTEGRATION. Although digital signs were once standalone systems, they're now increasingly integrated with back-end systems. This allows organizations to display real-time content that adjusts to changing situations and organizational goals, says Dave Haynes, co-founder of The Preset Group, a consultancy. For example, fast-food restaurants integrate their digital signage with point-of-sale and inventory-management systems so the signs only promote items that are in stock. Shipping companies tie their digital signage into logistics applications so they can display workflow performance data so workers can keep shipments on schedule.

3 NEXT UP: MOBILE CONNECTIONS. Near-field communications and other mobile technologies can enable direct connections between digital signage and individual smartphones to deliver personalized messages. Haynes says CIOs must help decide how to best enable those connections, such as by having users download apps that allow them to opt into an interactive connection. "There is a building relationship between the small screen and the big screen and that has to happen if the larger screens are going to retain their relevance," Haynes says.

4 NETWORKS WILL BE PUT TO THE TEST. An increasing percentage of digital signage content will be in ultra-high-definition (UHD), which could swamp an organization's network bandwidth, particularly if the content is pulled from the cloud instead of being stored and played locally, says IHS analyst Sanju Khatri. Digital signage using UHD displays first appeared at McCarran International Airport in Las Vegas in 2013, and IHS predicts huge growth in UHD displays in the next few years.

5 THE CIO SHOULD HANDLE GOVERNANCE. Marketing, HR and other business departments are typically responsible for how a company uses digital signage. But Lyle Bunn, an independent industry analyst, says CIOs need to develop governance policies to manage and support the system's hardware, software and bandwidth requirements and to ensure that digital signage can be integrated into back-end systems.

—Mary K. Pratt

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ANALYST VIEW

Spice Up Your Apps

Data from sensors can add zing to your applications and produce a more impressive customer experience **BY MIKE GUALTIERI**

Most apps are boring. Sensors can help. Sensors are data collectors that measure physical properties such as location, pressure, humidity, touch, voice and much more. You can find sensors almost everywhere these days, most obviously in mobile devices that have accelerometers, GPS and microphones. But most apps use only a fraction of sensors' full capabilities.

Apps without sensors fly blind. They don't listen. In short, despite their best efforts, they are at a disadvantage. But as sensors continue to proliferate, leading application developers will eagerly use them to make existing apps smarter and ultimately improve customer experiences.

Sensors allow you to incorporate advanced functions into your apps in three ways:

■ **Content enrichment** lets users see what they can't see. A simple display of sensor data can add value to almost any application. For example, if you use Google Maps to calculate a route, it also provides real-time traffic information generated from location sensors in smartphones. Commonwealth Bank of Australia has an app for prospective realty buyers. Their app uses the phone's GPS, accelerometer and camera to overlay images of nearby properties onto the landscape as you pan

your phone around.

■ **Context detection.** For example, Philips is testing an in-store navigation system that uses a mobile handset's camera to detect LEDs in the ceiling and figure out the customer's location. In the

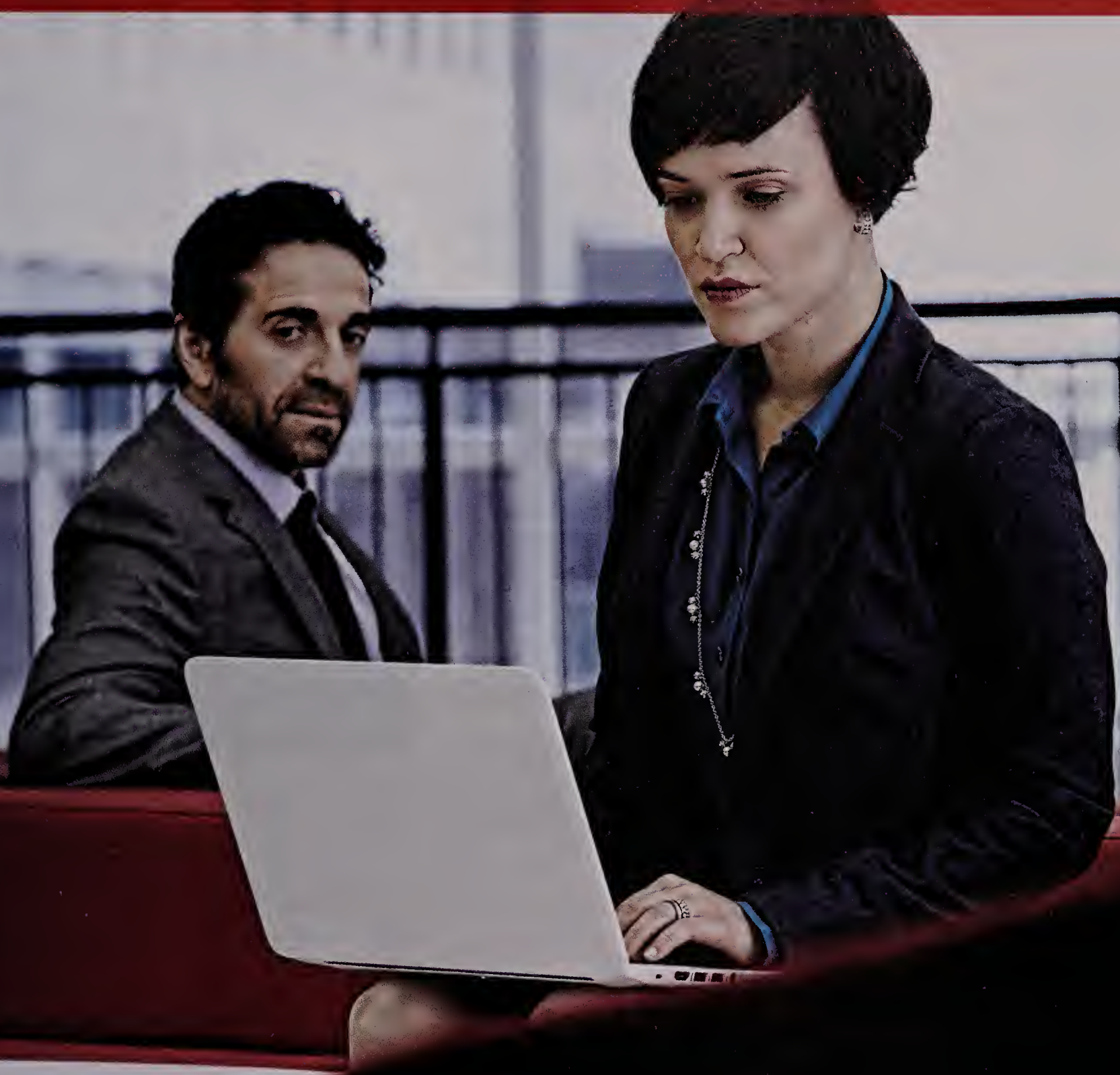
A simple display of sensor data can add value—content and context—to almost any application.

future, Google's traffic information could be enhanced as sensor data from cars—like braking, steering-wheel movement and windshield wiper activity—indicates rain, snow or icy conditions.

■ **Predictive apps** anticipate what users need even before the users realize they need it and helps them make that happen without searching through menus or swiping the screen excessively. Union Pacific uses acoustic and visual sensors to predict possible train derailments. And Mercedes-Benz USA uses sensors in some car models to predict when a driver is becoming fatigued and then push a "take a break" notification to the instrument panel.

Mike Gualtieri is a principal analyst at Forrester Research, serving application development and delivery professionals.

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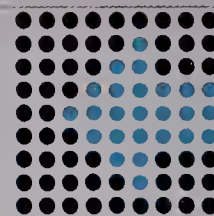
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Not So Simple

SAP's challenge is to make good on its promise to reduce the complexity of its software, pricing and customer relations **BY CHRIS KANARACUS**

THE PITCH

SAP has long grappled with the side effects of its software being perceived as both sophisticated enough to meet the specific needs of almost any company but also complex, expensive and unwieldy.

Under CEO Bill McDermott, SAP is pledging to make both its software and its customer-interaction processes simpler. At the Sapphire conference in June, McDermott unveiled Simple Finance, one of a planned series of Hana-powered ERP applications that use the Hana in-memory computing platform and other technologies to slim down the code base and make the user interface more appealing and productive.

Hana "is attached to everything we have," McDermott said in a recent interview.

Like rival Oracle, SAP is in a transition period as its customers, who traditionally bought perpetual licenses for on-premise deployments, look to adopt cloud-based software that is sold by subscription.

THE CATCH

SAP may need to fine-tune its pledge for more simplicity, says independent analyst Jon Reed. "SAP used to sell so much software based on its completeness of functionality," Reed says. But a product's sheer depth of features is declining in importance as enterprise software buyers adopt newer, more specialized cloud applications. Nevertheless, SAP customers still want the company to cater to their specific industry needs.

The more crucial task for SAP is to make doing business with it easier, and that work is far from done, Reed says. "SAP at Sapphire put out simplicity as a leadership mantra: We're going to lead you to a simple future," he says. "It's a challenge for SAP to live up to. When I hear customers tell me how simple and easy it is to deal

with SAP, I'll get on board."

SAP's message of simplicity "is a good story for customers," says Marco Lenck, chairman of DSAG, a German SAP user group. "This is the right direction for customers, but it takes investment in terms of time, knowledge and money to get there."

One CIO of an SAP shop agrees. "Simple is really hard," says David Wascom, CIO of Summit Electric Supply and a board member of the Americas' SAP Users Group, "because all the steps that have to take place in your business don't go away."

THE SCORE

Wascom says that he is seeing some signs of improvement lately from SAP, but he's hoping for more. "One of the biggest challenges I have as a business executive is not how to get

THE COMPANY

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Employees: 67,700

2013 Revenue: \$23.15 billion

CEO: Bill McDermott

What They Do: SAP is best known for its on-premise ERP applications, which businesses around the world use to run their operations. During the past few years, SAP has been focusing its software development efforts on Hana, an in-memory computing platform, and investing heavily in software as a service.

SAP to give me some particular piece of functionality," he says. "The challenge is managing the risk of my SAP investment." To that end, SAP should improve customers' visibility into its product road maps, Wascom says.

While committed to SAP technology, Wascom offered cautionary advice to any fellow CIOs who are considering the company's products.

"The big message is that SAP, among the platforms I've looked at, is the most powerful and most flexible to meet whatever your business needs are," he says. "But with great power comes great complexity. It's not like installing Microsoft Word."

SAP would benefit from having "simplicity ombudspeople" who would guide customers through difficult software migrations and improve the entire customer experience, says independent analyst China Martens.

Chris Kanaracus is a senior correspondent at IDG News Service.

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EASY UP



EASY DOWN

Land O'Lakes CIO **Mike Macrie** (left) and Director of IT M&A **Todd Stabenow** (right) help vet prospective deals by examining metrics such as the age of IT equipment and system downtime to see if there are any deal-breakers

Heat

Leading-edge CIOs don't just investigate the IT risks in mergers and acquisitions—they also uncover digital opportunities

BY KIM S. NASH

Todd Stabenow was on a secret mission. As he flew from Minneapolis to Paris one morning last year, he considered tactics for getting the information he wanted without revealing the truth about his visit. Land O'Lakes, a giant agriculture cooperative, had hired him the year before to oversee the IT part of mergers and acquisitions. The first step is investigating a target company for major risks—"the big rocks," as Stabenow says.

He was on the way to Geosys, a French firm that had developed algorithms for analyzing satellite images to help farmers track the health of their crops. Land O'Lakes already owned almost 10 percent of Geosys, and now it wanted to buy the rest. The opportunity to add a new line of business—selling this analytics service to its member farmers—was enticing as a strategic play in the fast-growing "precision agriculture" market. Land O'Lakes has doubled its sales in seven years, from \$7.1 billion in 2006 to \$14.2 billion in 2013, and has pledged to offer new tools to its member farmers to help them improve their yields and profits. Stabenow had to find out

of the Deal

whether the Geosys technology was solid enough to scale and whether overall IT at the company was sound. Just a handful of top executives at Geosys knew of Land O'Lakes' intentions; most of the people Stabenow would be interviewing did not. The deal wasn't definite, so speed and discretion were imperative.

You could soon find yourself in the same situation.

Whether they aim to boost revenues, break into new geographies, eliminate competition or otherwise expand an empire, M&A deals are on the rise. As of July, mergers and acquisitions were up 24 percent in number and 36 percent in value compared to the same period last year, according to FactSet Research Systems.

There's Valeant Pharmaceuticals' \$53 billion bid to take over Botox-maker Allergan, AT&T's \$49 billion acquisition of DirecTV, Comcast's proposed \$45 billion buyout of Time Warner Cable, and discount retailer Dollar Tree's \$8.5 billion plan to buy rival Family Dollar Stores. After a bidding war against rival Pilgrim's Pride, Tyson Foods' nearly \$9 billion acquisition of Hillshire Brands is expected to close this month.

As companies posture during the sensitive early stages, CIOs must swoop in to perform due diligence, assessing the inner workings of someone else's IT organization, on limited time, often in secret and typically with imperfect information.

"It's like a puzzle," says Michael Iacona, president of the Institute for Integrative Nutrition and former VP of technology for M&A at Thomson Reuters. "You collect pieces, and at the end of day, you won't have it complete. But you can see the picture."

It used to be that CIOs, tired of having IT be an afterthought, cried out to be brought into due diligence early on. But that's no longer good enough. To make the most of a merger, companies need CIOs involved in a deal's conception, says Jan Roehl-Anderson, a principal at Deloitte Consulting. CIOs who help shape the business case the company takes to Wall Street, she says, will be able to find not only risks but also potential rewards.

Yes, a CIO can spot IT problems that a CEO or CFO might miss, such as a decrepit application behind a pivotal business line that will take millions to stabilize. But in these digital days, some-

beyond the checklist

Investigate the target company's IT department and shadow IT—without spooking the staff

A playbook of standard procedures can speed up due diligence and help cover your bases. But every deal has its quirks. You're trying to get a feel for the IT group, as well as the facts about it, says Steve Phillips, CIO of Avnet, who has been involved in more than 50 mergers and acquisitions in the last decade.

Give yourself a head start by gathering any public information you can find through online searches, chats with key vendors and colleagues in your professional network, and reviews of financial documents. If an auditor finds a material weakness related to IT, the company must file a description with its annual 10-K.

The first round of due diligence paints the landscape of IT at the target company—a list of major hardware, software, data centers and other facilities, plus an overview of the IT budget and major projects underway. Ask for information about systems in the cloud and what is outsourced, says Jan Roehl-Anderson, a principal at Deloitte Consulting. She also likes to see application architecture diagrams and disaster-recovery plans.

Todd Stabenow, director of IT M&A and international systems at Land O'Lakes, makes a point of asking for proof of software licenses and whether there are any disputes going on with IT vendors.

If the deal is big and there's time, a second round of inquiries

may delve further into licenses and other contracts, anything missing or inconsistent from the first round, and perhaps a detailed version of the IT staff org chart.

Don't forget shadow IT. Interview finance, HR and marketing leaders about their IT systems and projects, which might be unknown to the CIO at the target company, Roehl-Anderson says. Also check in with the real-estate department about remote data centers and other offsite IT facilities, she says.

Cora Carmody, SVP of IT at Jacobs Engineering, sometimes inquires about the compensation structure for the target company's IT organization. That's helpful when devising plans to integrate the staff later, she says.

Be careful about who you talk to, and how you talk to them, so you don't spook future allies, Carmody advises. "One of the first things I learned was tone and tenor," she says. "You don't want to lose historical knowledge and brainpower if the thought of being acquired disturbs someone." Some former CIOs from past acquisitions have stayed on at Jacobs.

Be wary of trying to get too detailed, Phillips says. Due diligence is for "trying to assess whether we can make the transaction make financial sense," he says. "We don't want any big surprises from IT, but we're not trying to lay out an integration plan yet."

—K.S.N.

times only a technology leader can recognize IT assets that could increase the value of the deal.

That could be the target's state-of-the-art data center, which could save you the expense of building one yourself. Or it could be a quiet group of data scientists with a killer algorithm for predicting customer behavior. Or, as the IT team at electronics distributor Avnet discovered during a recent deal investigation, it could be an internal training system that could be built up into a fast-growing source of revenue.

A higher standard for IT's role in these deals is now emerging, says Dewey Ray, president of M&A consultancy Cognitive Diligence: "CIOs formulate theories about approaches to the acquisition itself and understand the business drivers."

Or CIOs should, anyway. "Not many of us get trained in due diligence or mergers and acquisitions. You're learning on the job," says Steve Phillips, CIO of the \$25 billion Avnet. Phillips has done 51 acquisitions in the past 10 years. "Your first one is always really hard."

RIGHT PROCESS, RIGHT PEOPLE

After a buyer issues a letter of intent to a company it wants to purchase, the process soon moves to due diligence. A cadre of senior executives visits the target company to learn about its strategy, plans and basic operations and facilities. For a CIO, the point is to evaluate the state of IT there and how it matches

yours. Where the two systems differ, there are risks to mitigate or opportunities to exploit. The trick is to quickly estimate the time, manpower and money needed for either kind of work.

Access can be limited when time is short. Smaller companies often don't have the requested information readily available, says Cora Carmody, SVP of IT at Jacobs Engineering. Carmody has done a lot of deals: Acquisitions account for one-third of growth at the \$11.8 billion company and are critical to meeting its goal of boosting profits by an average of 15 percent every year.

Some interviewees aren't forthcoming because the acquisition is unwelcome or they're afraid for their jobs. The Securities and Exchange Commission and other bodies govern what information can be disclosed or kept confidential at which stage of a transaction, says Rudy Puryear, who leads the IT practice at Bain and Co. For example, during due diligence, two companies cannot see each other's "competitively sensitive" information, such as current or future pricing. But a neutral third party agreed upon by both companies can evaluate that data for them.

Before Comcast and Time Warner Cable announced their deal in February, the companies had shared information about equipment such as hardware, software and routers. But not until things progressed did they reveal more sensitive material, such as certain customer data. The rules are there to protect companies in case the deal falls apart, Puryear says.

Rather than setting up camp at the company headquarters,

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Cora Carmody, SVP of IT at Jacobs Engineering, helps to vet acquisition candidates long before a bid is made, assessing whether the business is a good fit for Jacobs.



30

the two sides might use a neutral third party to run a “clean room,” physical or virtual, where material is shared and evaluated. That’s especially common when doing deals in other countries; you don’t want language barriers to blur the nuances in critical information. Participants sign nondisclosure contracts and agree to follow rules laid out by lawyers, such as no personal electronic devices in the clean room.

Deloitte’s Roehl-Anderson recalls one merger where the parties were especially worried about a leak. They taped paper to the windows of the conference room and installed a lock on the door. Retired executives with no vested interest in the deal, or in using the proprietary information afterward, assessed the data, diagrams, financial forecasts and other material. “If the merger didn’t go through, those people were gone anyway,” she says.

As an extra precaution against compromising vital information, companies sometimes hire consultants to do an initial

assessment. A consultant might observe, for example, that there is little customer overlap between the two companies or that their product pricing strategies don’t mesh well, Puryear says. Players at the companies don’t see each other’s confidential data, but they do gain valuable insights about it, he says.

At Land O’Lakes, the Geosys transaction wouldn’t be huge, with an ultimate purchase price of \$26 million. But Stabenow knew that creating a new business would be strategic, bringing in revenue for years to come—if all went well. To avoid sparking worried speculation among Geosys employees, he didn’t join his peers from finance and legal on their due diligence trip. He conducted the IT portion separately.

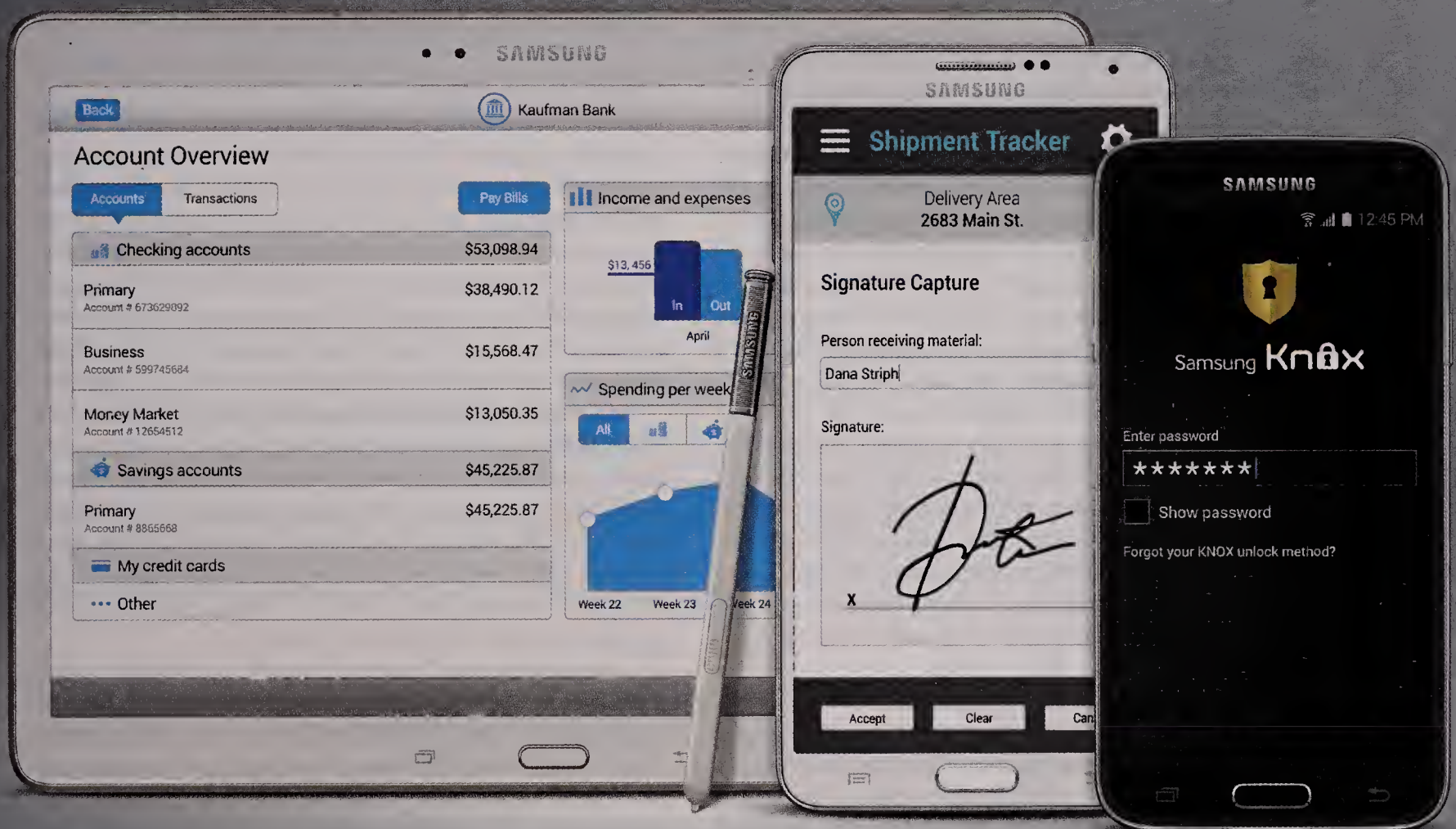
“We went in under the guise of an IT audit, given we were already part-owners,” he says.

As a result, he had access to lots of Geosys IT staff members knowledgeable in many areas. That’s not typical, though.

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“It’s a great opportunity to *differentiate* yourself from

Usually, just a small group of senior leaders is available. “Sometimes you’re speaking with the CFO and he’s struggling with getting the detailed answers you need,” he says.

Stabenow used an IT M&A playbook, which he had developed for Land O’Lakes CIO Mike Macrie, looking at items such as the age and stability of infrastructure equipment, downtime, and problem-resolution processes. The report was mostly good, save for disaster recovery and infrastructure—no deal-breakers. Macrie and the IT leadership team then began to mull ideas for fortifying those areas.

Macrie has been involved in more than 40 acquisitions in his career and knows they don’t all go as well as Geosys. After he joined Land O’Lakes in 2010, he wanted to formalize the acquisition process, to make it repeatable and speedy, and to help get the most value from each deal. Eventually, he saw the need to hire someone to manage IT’s role in M&A work, in part to improve relations with the Land O’Lakes strategy group. “Consistently, we were getting blindsided after a deal was done with very little IT due diligence,” he says. “We’d be asked to execute on things we had little visibility into.”

Macrie brought in Stabenow, a former colleague at Ingersoll Rand who had led M&As and divestitures for IT there. His MBA and experience with finance and global project management were attractive, Macrie says, because whoever filled the role had to be viewed as part of the business team. “We had to hire someone with the ability to talk about risk, planning and synergy targets,” Macrie says, “and how IT could be an enabler to possibly gaining more.”

FINDING THE BAD STUFF

Before any company can gain from an acquisition, however, the potential problems must be identified and weighed. IT risks can include old or multiple data centers, cybersecurity holes and onerous software license contracts. These items can result in huge costs to be borne by the buyer.

Unfavorable contracts with vendors often go undiscovered, says Roehl-Anderson. Maybe an agreement between the target company and a vendor obligates you to pay millions of dollars for maintenance in the next four years, subtracting from the synergy savings the acquisition was supposed to deliver, she says.

Software about to lose vendor support may need to be upgraded soon. “A CEO and CFO would never know that and it wouldn’t get disclosed in early conversations happening at a higher level,” Puryear says. “The CIO knows we’ve got a \$20 million exposure here because we have to replace it within two years.”

IT problems alone typically won’t scuttle a deal, but they could change the negotiations or add to a pile of risks that ultimately turns a company off, says Iacona, who is also a former longtime CIO. One large company Thomson Reuters looked at when he was there ran some old technology that few IT people knew how to manage, he recalls. That discovery went into the demerit column and Thomson Reuters ultimately dropped its pursuit, he says.

If an acquisition moves ahead despite sizeable risks, the buyer will sometimes ask for a pot of money to be placed in escrow, to be drawn from if needed during integration, says the consultant Ray, who is author of *The IT Professional’s Merger and Acquisition Handbook*. For example, if the buyer audits the acquired company’s compliance with software licenses and finds violations, then the buyer can use funds from the escrow account to pay for making the systems compliant.

IMPRESS THE BOSS

M&A is a good time to try to improve your career standing. The projects are high on the CEO’s agenda and can make a substantial difference to the company. The IT leader who recognizes that a target company’s sales forecast is predicated in part on successful rollout of a new ERP system—and the project is going south—can bring unique insight to C-suite colleagues, Puryear says. “An informed CIO could suggest that maybe the company is not worth what it says it’s worth,” he says. “These things don’t appear on the surface, but a couple layers deeper.”

Avnet’s due diligence team happened upon valuable technology in 2012 when it was checking out Magirus Group, a data center technology distributor in Germany. They spotted a small but elegant online system the company used for internal training. They didn’t trumpet their interest, wanting to avoid showing their hand during negotiations, says CIO Phillips. “It was noted and we were thinking about it,” he says. “That increased the momentum to complete the transaction.”

After the deal closed, Magirus developers (now part of Avnet) scaled up the Magirus system, branded it Avnet Academy, and began selling it. Today it reaches paying customers in 59 countries.

At the very least, CIOs must understand the business drivers behind a deal. For example, Avnet bought Magirus for an immediate financial boost in Europe and the Middle East. Jacobs Engineering bought Federal Network Systems in July to build its business in the intelligence community and Eagleton Engineering in February to add expertise in oil pipeline design and construction.

CEOs, meanwhile, are getting smarter about the business implications of IT issues during a merger, Puryear says. He’s working on a deal between two large healthcare companies that each run about 80 percent of their operations on homegrown systems. “The CEOs realized very early that it was absolutely critical to sort out the platform issue sooner rather than later,” he says. “There are pervasive implications for strategy and operations.”

More executives will start to evaluate the intrinsic value of IT and data in the coming years, Ray predicts. But it’ll take awhile. “The M&A process is dominated by lawyers, advisers, accountants and investment bankers who are mired in the traditional approach to deal-making and not particularly open to nontraditional ways of thinking about finding value,” he says.

At Jacobs Engineering, SVP of IT Carmody expands her due

other CIOs.” -JAN ROEHL-ANDERSON, Principal, Deloitte Consulting

diligence beyond IT to larger strategy discussions. For example, she helps vet acquisition candidates long before a bid is made, assessing whether the business, corporate culture and customer base would fit well with Jacobs.

In one recent acquisition, Carmody talked to a couple of big customers of the other company to get feedback about the customer experience, then took that intelligence to Jacobs' board of directors to bolster the case for doing the deal. "I could tell the board it was a good fit," she says.

Doing M&A transactions can be a potent way to enhance your skills as a business executive, says Roehl-Anderson at Deloitte. "It's a great opportunity to differentiate yourself from other CIOs."

Carmody, for example, is often appointed to the team that audits the report from the initial due diligence group, looking for holes in the information and analyzing the IT findings with an eye toward legal and financial implications—for example, how much wiggle room there might be in the target company's enterprise license agreement with Microsoft.

Jacobs Engineering uses M&A as a stretch assignment. Bosses populate due diligence and integration teams with managers who meet tough criteria. Among them: Good general

leadership qualities and the ability to plan large projects and to understand lots of legalese in IT contracts. Team members also must be able to travel and sometimes be away for weeks or months. "They have to dedicate not just their mind but their body," she says.

• • •

As Land O'Lakes settled its acquisition of Geosys, Stabenow went on to provide guidance about M&A processes to the HR department. Macrie couldn't be more pleased. Such a show of business know-how strengthened the relationship between IT and other colleagues, he says. "That was a great outcome."

In January, Land O'Lakes expanded Stabenow's job to add international management responsibilities. He declined to provide details about the potential deals he's investigating now, but the company has said it plans to expand in China, Africa and Latin America. **CIO**

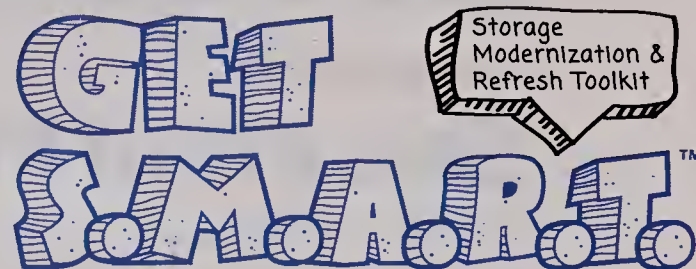
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SOUNDING BOARD

Secrets of Project Success

These CIOs balance traditional and unconventional approaches to keep projects on track and deliver on their promises

MARC A. HAMER, THE BABCOCK AND WILCOX CO.

ESTABLISH VALUE AND OWNERSHIP

Many projects become derailed due to poor planning and unclear value and ownership. Proper planning requires assessing resources up front. I set up review committees to address priority, value and ownership. We measure ROI before and after the project is completed to see if we achieved our target. All projects are prioritized and funded based on value and return, and each has an owner from the business and one from IT.

Keeping projects on track—and even fixing those that start to get off track—comes down to running IT like a business and having a system to identify early warning signs. During the prioritization meetings, we go over project priorities, budget and schedule, as well as what's next on the to-do list. IT does not get marching orders; each project is a partnership. We work on projects that affect the bottom line of the company, ►►



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and to do this effectively, you need a leader who understands the cost of your IT services. Do you know all the services you provide, the cost you provide them at, and the service-level agreements you have to meet? Do your IT leaders know how to compute ROI and then measure that ROI once implementation occurs? Answer those questions first to have more successful projects.

RAVINDER PAL SINGH, AIR WORKS INDIA

SOLVE REAL PROBLEMS

I've established a leadership position that eliminates the chance of projects going bad. Early on, I aligned the technology road map with our three key strategic elements: growth, quality and the customer. Since I now report to the CEO, I am empowered to take unconventional approaches to executing projects. For instance, I converted the road map into a cluster of interdependent projects, each with a deadline of 90 days. We also do not restrict ourselves to a step-by-step methodology; instead, we've created sustainable, potent communities that generate ideas, solve problems and own their successes and failures. This way, projects are defined with the goal of solving "real" problems.

After combining these elements, we choose a simple and agile technology that satisfies our requirements for governance, performance and security. We make heavy use of the cloud and the Internet of Things.

This approach has enabled us to achieve seemingly impossible goals, like implementing ERP in over 45 locations in less than 270 days, achieving over 95 percent inventory accuracy in 50 days, establishing 100 percent operational transparency for customers in less than 90 days, and connecting all our hangars and offices in less than 90 days.

BONNIE SMITH, EATON

CULTIVATE CASUAL CONVERSATIONS

As IT leaders who are most often schooled in engineering disciplines, we sometimes forget that the best governance practices are, in the end, executed by a wildcard—namely, people. Often, the people who report to us will, through a surplus of good intentions, suppress any rumblings on the ground in the updates they give us, concealing the fact that milestones are quietly being missed. What is needed is an honest dialogue, which is often stymied by a fear of disappointing the boss.

As CIO, it is absolutely critical to ensure that you, personally, build relationships with the speakers of truth. You must identify the people who will tell you that what you're being told isn't what is really happening. The most common way to gain these insights is through an offhand comment someone makes in casual conversation, since lower-level staffers may worry about stepping on someone's toes during formal meetings.

Once that communication channel is established, cultivate it carefully, listen very intently and word your responses judiciously. The signals you get from these conversations are what let you home in on trouble spots or pressure-test more than just a few deliverables. This is absolutely critical to knowing what to adjust, whether it's rearranging resources, changing processes or adding more checks and balances.

TAKE Note

The SMAC Impact

REGISTER CIOs are once again in the line of fire as new developments in social, mobile, analytics and cloud (SMAC), along with other digital disrupters, shake up the IT status quo. In this environment, business model disruption happens faster, risks are amplified, and opportunities for innovation and transformation appear daily—and disappear just as rapidly, according to a recent white paper by the CIO Executive Council. Will the CIO assume the role of "digital pathfinder," or will new developments result in an IT restructuring? Join Martha Heller, an executive recruiter and author of *The CIO Paradox*, and a panel of IT leaders for a live webcast as they explore why today's environment is not "IT as usual." council.cio.com/disrupters

Developing Your Bench

ASSESS To progress from service provider to true business partner, IT leaders must adjust their focus, enhance staff expertise and improve stakeholder relationships. Although the path can be strewn with obstacles, there are many rewards, such as delivering greater business value and making the IT profession relevant in any business climate. CIOs can get started on their journey by assessing and understanding their leadership competencies to identify areas for further development and improvement. council.cio.com/benchstrength

Focusing on the Client

DOWNLOAD Management fads come and go, but a service-oriented IT culture never goes out of style. Developing one requires leadership to change the organization's culture from the top down, so that every member of the IT team has a new mind-set of delivering technology services that meet or exceed the client's expectations. In a recorded webcast, IT leaders Bob Logan (CIO at Leidos) and Scott Saccal (senior director and IT leader at Johnson & Johnson) share their insights and firsthand experience on how important good service is to the success of IT. council.cio.com/client

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IT and Marketing Mix Well

At Brown-Forman, a wine and spirits maker, IT and marketing find they have lots to learn from each other **BY T.J. GRAVEN**

Digital marketing is relatively new in the beverage alcohol industry. It was once a tiny percentage of the marketing budget, but some brands—like our Jack Daniel's Tennessee Honey—now rely heavily on the digital aspect of ad campaigns.

Because we have a lot of digital natives on our teams, our IT organization has a solid awareness of how consumers interact with our brands in the digital space and can provide meaningful insights to our marketers. While we're not equipped to teach our marketers how to market, we can help them understand technology, the technographic behavior of consumers, and where our messaging should appear. When you ask a digital native how they interact with brands, you get a very different answer today than our marketers would have expected just a few years ago.

Our marketing-IT partnership started with marketing asking our technology team to help establish Web development standards for our agency partners. The marketing teams quickly realized it made sense to leverage those digital assets across our portfolio of brands. Soon, marketing began asking IT more questions, like what consumers were doing with technology and which platforms were seeing the largest growth. Having an internal research group in technology collaborate with the marketing organization has been very special.

It has not been easy, though—IT and marketing speak completely different languages, and we struggled with something as simple as agreeing on what “digital marketing” means. To a traditional technology group, it's primarily a development effort, whereas to marketers, it's about consumer touch points. My advice for IT and marketing is to invest the time to understand each other's priorities. It is not a natural fit, so you must force yourself to do it.

I am fortunate to have a good relationship with our chief marketing officer, which goes back to earlier days in our careers when we were both in finance. Because we share that background, we can help our organizations work through the barriers and develop a mutual appreciation for each other's work. Also, the digital marketing teams report to both marketing and IT. This makes the teams accountable for developing digital material that both meets tech-

nology standards and is reusable across brands. It bridges the gap between marketing language and technology realities.

Our director of digital media hosts a quarterly Digital Day, where the digital marketing directors and technology folks discuss opportunities, trends and what our competitors are doing. In that meeting, it is hard to distinguish between the marketing and IT personnel. This was an “Aha” moment to me, because IT's value was different from what I anticipated.

IT has historically supported marketers with little opportunity to influence them. Technology was technology, and marketing was marketing. But the IT efforts involved with marketing execution have grown in scope, depth and breadth, and marketing is now turning to IT as a partner to help reach consumers in an efficient and effective way. When we realized that our target consumers were walking our own halls with the kind of technology skills that marketers were trying to understand, it was a nice marriage of functions.



T.J. Graven is CIO at Brown-Forman.

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High-Tech Meet-and-Greet

Wherever people convene, IT is essential, says James E. Rooney, executive director at the Massachusetts Convention Center Authority **BY MARTHA HELLER**

How is technology changing the Massachusetts Convention Center Authority?

We host conventions in Boston, which is a major international destination for knowledge-based industries. We have as many as 30,000 people in the convention center at one time, and they each carry two to three devices. They want reli-

able connectivity; this is a constant demand on convention centers. We also need to enable a speaker in Boston to be broadcast to Hong Kong or Paris or wherever the global audience resides.

One new application that I enjoy is our real-time survey tool. We can survey tens of thousands of people in our facilities and learn whether a meeting room is too cold, a bathroom is not clean or there is a maintenance issue. I used to learn all of that after the meeting was over, when I couldn't do much about it.

Are you hiring employees with different sets of skills?

Only a few years ago, conventions were very large halls set up for a

lecture format, and the audiovisual requirements were fundamental. We needed friendly people who knew how to host an event, and our greeters would just say hello and give directions. Now they have iPads with information about every session, hotel selections and local restaurant information. We also need many more people who can provide

This new technology puts pressure on IT. What are the skills you value in your IT leader?

I like having what I call a "lunch pail" CIO, who does not sit behind a desk thinking about the future of technology but who is engaged with our people. I also need a leader who is very good at listening to ideas and translating them into technology solutions.

What advice do you have for other leaders about how to position their CIO for success?

Two years ago, we had a yearlong series of meetings at all levels of the

organization to discuss our vision and how to achieve it. Through that process, we decided to capitalize on our reputation for superior technology by pulling technology into our list of strategic priorities. That process helped empower our CIO.

How will technology affect the convention business in the future?

Every once in a while, I am asked, "With technology allowing people to do everything remotely, will conventions become obsolete?" Years ago, we asked that question about retail and real estate. But people still like to go to shopping, and they still come to the office. I actually think that because of technology, people make more connections than they used to, and then they decide to meet. But I still need to be acutely aware of how technology is changing our business.

When it comes to convention-center technology, what are you most excited about?

Recently, we hosted a meeting for a group of heart surgeons, and one of the surgeons was on a dais in front of a big screen that showed a woman on an operating table in Milan. Through the use of robotics, the doctor in Boston was operating on this woman. We've seen robotics and holograms and other technologies in these meetings. To me, this is amazing.

Martha Heller is president of the executive recruiting firm Heller Search Associates and author of *The CIO Paradox*. Follow her on Twitter: @marthaheller.



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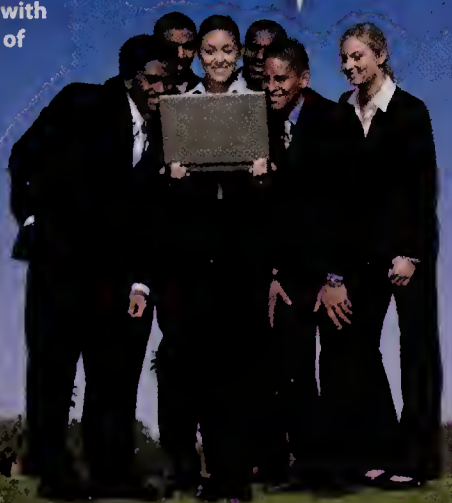
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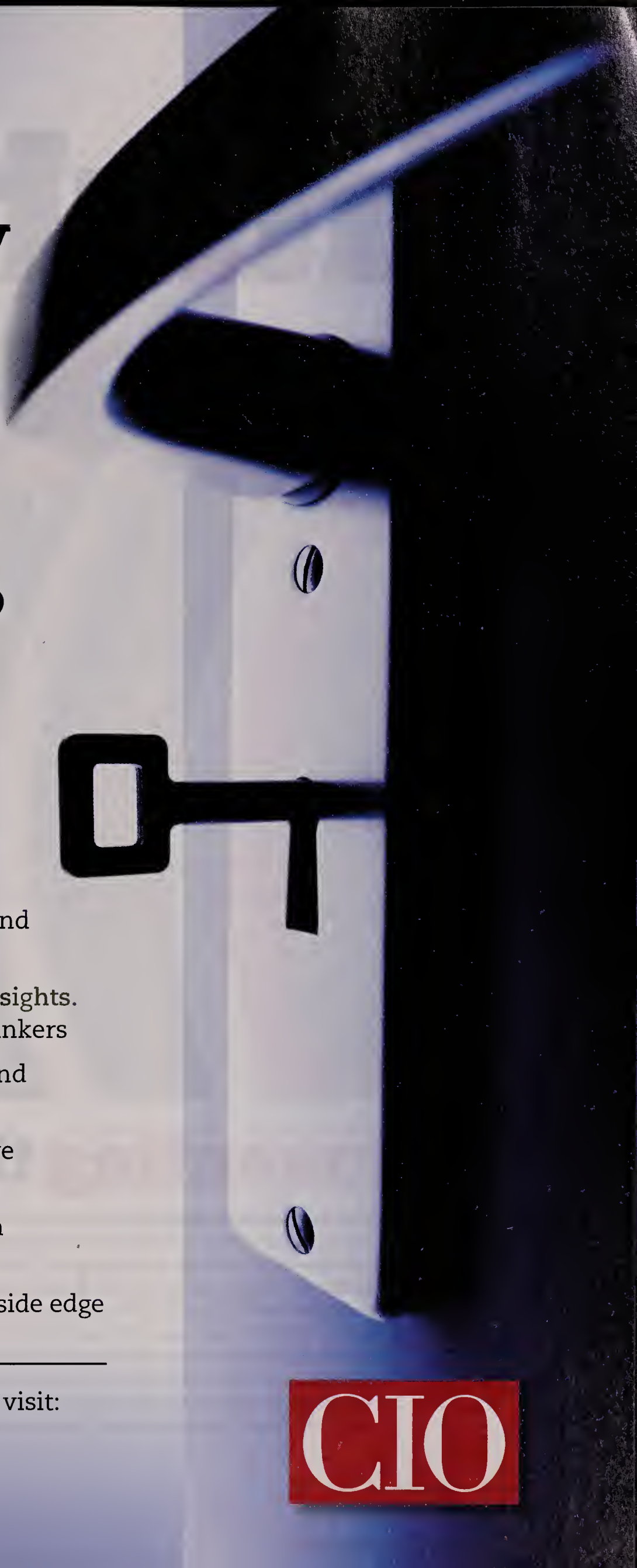
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Reinventing the Wheel

Travelers in cars have long been able to use real-time mapping technology to plot their routes, but bicycle riders have been left out, as looking at a GPS or smartphone screen while pedaling is too dangerous. That's now changing, thanks to the Vanhawks Valour, a smart bike with built-in technology that calculates efficient and safe routes based on real-time data. The bike's Bluetooth capability allows it to connect with an iPhone or an Android device through the Vanhawks app, and sensors in the bike frame gather location data. During a ride, the handlebars light up and vibrate to let riders know when to turn or whether a car in their blind spot is coming too close. Over time, the bike analyzes your ride and gathers data from other Valours to suggest faster and more bike-friendly routes, like side streets instead of main roads, or roads with fewer potholes. If the bike is lost or stolen, other Valours can detect the missing bike when it comes near and send a location alert to the owner. Vanhawks expects to begin shipping Valours next month.

—Lauren Brousell



Can a move spark a **transformation?** See it happen with System x.

You've probably heard that IBM® and Lenovo have entered into a definitive agreement whereby Lenovo plans to acquire the IBM System x® server business.¹ This is big news, and it is natural for clients to have a few concerns. This letter from all of us on the System x team is to assure you, our clients, that this strategic collaboration is a benefit for the industry and especially for you.

Perfect Collaboration.

Both IBM and Lenovo are dedicated to a larger vision for x86 systems. IBM has long been a leader in client-focused innovation of System x servers and solutions, featuring Intel® Xeon® processors. Lenovo is committed to x86 computing and has a proven record of success, as evidenced by their #1 share position in PCs. By leveraging their strengths in scalability and operational efficiency and a broad channel presence, Lenovo will be able to ensure uninterrupted delivery of the innovative System x servers and solutions that IBM offers today. This will create the winning combination to make System x a leader in the x86 segment.

Working for You. Always.

Our respective commitments to excellence mean you can continue to rely on getting the performance, reliability and return on investment you expect for your IT infrastructure. Our team has always been dedicated to delivering exemplary levels of service. We are happy to inform you that IBM will continue to service the System x-installed base for an extended period after the transaction closes, so you will experience the same quality and accountability that you have come to trust over the years. What's more, we – the 7500 members of the IBM team that delivers System x servers – will continue to do the same, as we will also move to Lenovo.

At IBM, we have always been proud of our ability and commitment to meet the needs of our clients. This announcement opens new avenues for us to expand and improve on this tradition.

Please do visit www.ibm.com/futureofx to learn more about this development.

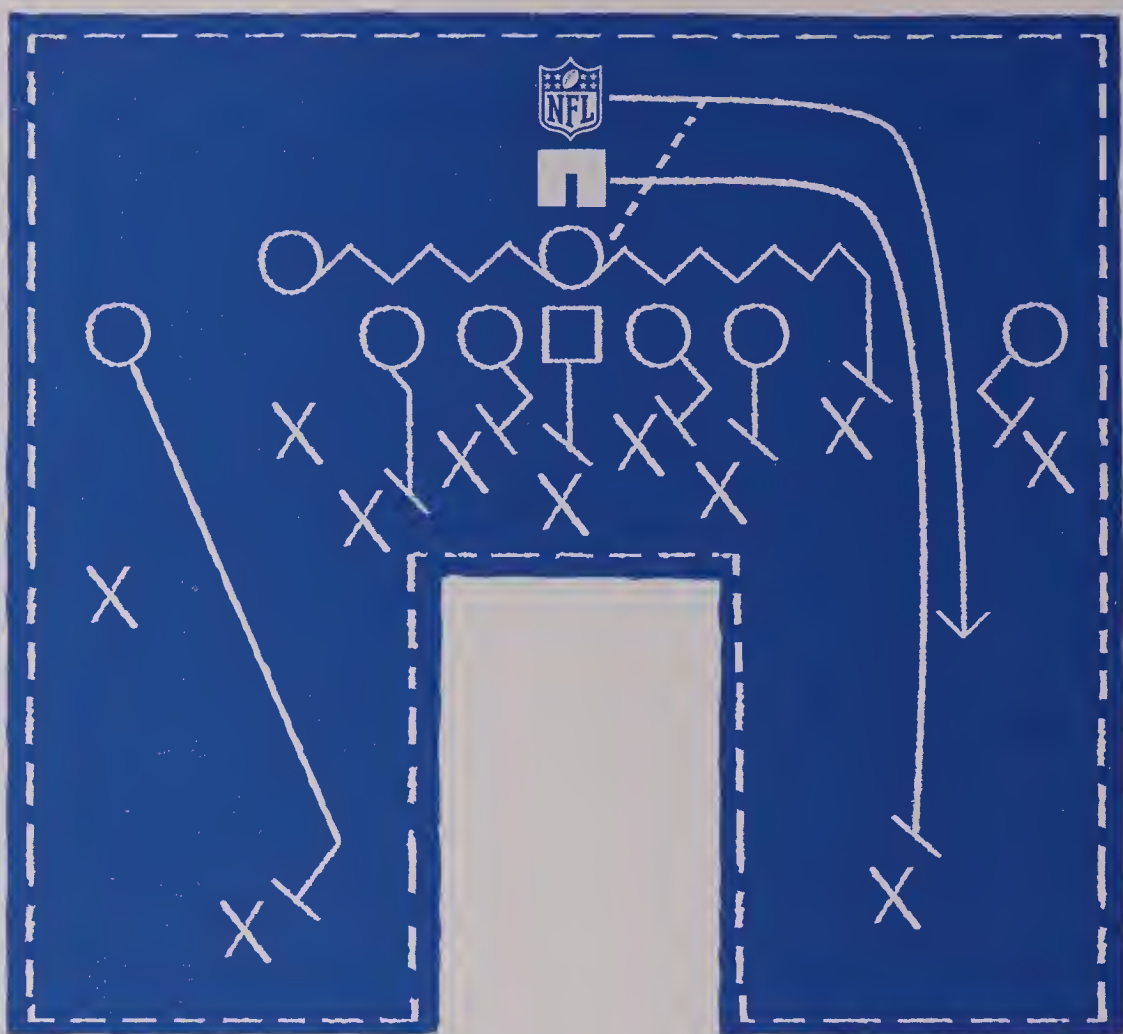
Sincerely,

The entire System x Team



¹The closing of this deal is subject to regulatory review.

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